

found at autopsy. A moderate to a high leukocytosis indicated a secondary sepsis; 93 of 108 charted pneumonia cases without empyema showed evidence of sepsis.

The reason for the marked cyanosis, observed clinically, was found to be extensive lung consolidation, which with the large amount of coagulable material found in the alveoli surrounding scattered areas of consolidation must have made proper aëration of the blood extremely difficult. The three cases of sudden death reported not only point out the extremes of the pathological process but are also of medicolegal importance.

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### CLINICAL ASPECTS OF PNEUMONIA FOLLOWING INFLUENZA, CAMP DODGE, IOWA, 1918.

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1. THE statements and conclusions of this report are based on a study of the charts of 274 patients and on personal experience during the epidemic. All the patients included in the formal review of 274 charts were admitted to the hospital in the first five days of the epidemic; we feel that this ensures a study of the typical cases, as the atypical cases are more likely to be seen as an epidemic subsides.

Of the 274 patients whose histories were studied 212 were white, 61 negro and 1 Indian; all were admitted to the hospital with influenza, except 4; in these 4 the history pointed to a prior influenza, but pneumonia was present on admission.

The symptoms and course of the influenza were first studied. The onset is almost always sudden; in 100 charts the definite statement of a sudden onset is made; in 24 the onset is said to have been gradual; but among these 24 many were found in whom it appeared that the patient had not been quite well for a while, had suffered with a "cold," for instance, yet the definite symptoms of influenza had appeared quite suddenly: moreover, even the charts that contained no statement as to the abruptness of onset usually stated the history in a way to warrant the inference of suddenness in onset. Finally, of the 274 patients only 30 stated that they had been sick more than four days; 35 were admitted to the hospital within twenty-four hours of the first symptoms, 111 on the second day, 45 on the third and 17 on the fourth day.

Headache was the most common complaint; it was mentioned 206 times, often being spoken of as severe and the most distressing symptom. Cough was complained of in 194 cases; 3 times it was described as dry, 3 times as associated with a mucous or mucopurulent sputum; in 61 cases the cough was characterized as slight;

than ten days; termination is by crisis in about 15 per cent. of the cases.

4. There is a tendency to complications of a septic nature; purulent accumulations occur in various situations; mediastinal abscesses, empyema, septic arthritis, muscular abscesses, otitis media have been seen; erysipelas may also be a complication.

5. Of uncertain etiology we have no rational method of treatment; the essential feature, the bacteriological causative factor, must be determined before we can look forward to specific therapy. Prophylactic measures are now the most important; these should be carried out, in the light of the established fact that the disease is transmitted by contact infection. Once the pneumonia is established we must rely on general measures of treatment.

6. It is imperative that patients should not be discharged from observation too early. Prophylaxis should include protection of the patient from exposure or undue activity for some time after apparent recovery; in view of the fact that physical findings persist for some time after the general condition is good (definite evidence of considerable fluid was found in one patient, after he had been up and about several days), and in view of the further fact that activity of every sort seems to lessen resistance to the disease, too great care can hardly be used to protect the convalescent patient from recrudescence or complications.

7. The indications for aspiration of pleural effusions are, in our opinion, not clearly defined; at the height of the pneumonia the effusion has a marked tendency to recur, causing a rapid loss of fluid when large amounts of fluid are aspirated often; after the occurrence of the subcutaneous emphysema, already noted, and the failure to discover any cause for it, except bronchial and peribronchial necrosis, we felt that caution must be used to avoid injury to the lung by means of negative pressure employed to withdraw fluid; finally, there still remains the possibility that the pleural effusion is at first a conservative process. The entire subject will be discussed in the report of Captain Manson, but we may state the indications, as they appeared to us; numbers 1 and 2 are definite indications for interference.

(a) The discovery of frank pus, especially after the height of the pneumonic process had passed.

(b) Definite evidence of mechanical embarrassment on the part of the heart.

(c) Small effusions early are better left alone; later if purulent they must be removed.

(d) Larger effusions even when displacing the heart had better be removed by repeated aspirations of 500 c.c. or thereabouts at a time.